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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,204

03/25/2005

Masakazu Kawano

26688U

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20529

7590

04/24/2007

NATH & ASSOCIATES

112 South West Street

Alexandria, VA 22314

EXAMINER

CRENSHAW, MARVIN P

ART UNIT

PAPER NUMBER

2854

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/529,204

Applicant(s)

KAWANO, MASAKAZU

Examiner

Marvin P. Crenshaw

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 16 is/are pending in the application.
- 4a) Of the above claim(s) 5, 6, 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 4, 7 - 12, 15 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/25/05 and 12/06/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I corresponding to Figs. 1 – 3 and 5 and claims 1 – 4, 7 –12, 15 and 16 in the reply filed on February 23, 2007 is acknowledged.

Claims 5, 6, 13 and 14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 22, 2007.

Claim Objections

Claim 1, is objected to because of the following informalities: With respect to the claim the fuser roller does not transmit the light for fixation, it transmit heat from the light. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 3, 9, 11, 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hwang (6,049,692).

With respect to claim 1, Hwang teaches an apparatus for fixing photocurable inks (Fig. 3) comprising a light source (Fig. 3, 12) for irradiating light for fixation to a recording side of a recording medium printed with photocurable ink, a fixing member (Fig. 3, 11) which is disposed in a conveyance path of the printed recording medium, is formed in a cylindrical shape (Fig. 3), and can transmit the light for fixation, a conveying member (15) disposed so as to face the fixing member over the conveyance path and a pressurizing unit (Fig. 3, the spring member for 15) for nipping the fixing member and the conveying member, wherein the recording medium (17) is conveyed between the fixing member (11) and the conveying member (15) nipped by the pressurizing unit, the fixing member (11) and the recording side of the recording medium (17) are made come into tight contact with each other (Fig. 3), and a contact part (See col. 4, lines 32 – 37) between the fixing member and the recording side of the recording medium is irradiated by the light for fixation which transmits the fixing member to thereby cure/fix the photocurable ink printed on the recording side of the recording medium.

With respect to claim 2, Hwang teaches the apparatus for fixing photocurable inks (See col. 4, lines 32 – 37) wherein each of the fixing member (11) and the conveying member (15) is supported so as to be rotatable around its rotary shaft (See col. 4, line 20), the rotary shaft is disposed in a direction orthogonal to a conveyance direction of printed recording medium, and overall length (Fig. 2) in the rotary shaft direction is equal to or larger than width in the direction orthogonal to the conveyance direction of the recording medium.

With respect to claim 3, the apparatus for fixing photocurable inks wherein peripheral velocity of each of the fixing member (11) and the conveying member (15) is equal to conveyance speed of printed recording (This is apparent since these two members are used to move the medium).

With respect to claim 9, To have a driving unit, which rotates the fixing member (11; Since member 11 is rotated as it fixes the toner 16 onto medium 17, it is necessary to have a means to drive the member 11 so that it can be rotated; hence it is inherent to have the driving unit as such mean).

With respect to claim 11, Hwang teaches a method for fixing photocurable inks (Fig. 3), comprising the steps of conveying a recording medium (17) printed with light-transmitting ink in a conveyance path while nipping a fixing member (11) which is disposed in the conveyance path of printed recording medium, is formed in a cylindrical shape (Fig. 3), and can transmit light for fixation (12) and a conveying member (15) disposed so as to face the fixing member over the conveyance path by a pressurizing unit (Fig. 3, the spring member for 15), and making the fixing member and a recording side of the recording medium come into tight contact with each other and irradiating the light for fixation (See col. 4, lines 32 – 37), which transmits the fixing member, to a contact part (Fig. 3, when the fixing member and conveying member meet to contact and fixate the image on the medium) between the fixing member and the recording side of the recording medium to thereby cure/fix the photocurable ink printed on the recording side of the recording medium.

With respect to claim 15, Hwang teaches printing apparatus comprising a printing unit which performs printing on a recording side of a recording medium with photocurable ink, a light source (12) for irradiating light for fixation to the recording side of the recording medium printed by the printing unit, a fixing member (11) disposed in a conveyance path of the printed recording medium, and which is formed in a cylindrical shape, and transmit the light for fixation, a conveying member (12) disposed so as to face the fixing member over the fixing member and a pressurizing unit (Fig. 3, the spring member for 15) for nipping the fixing member and the conveying member, wherein the recording medium (17) is conveyed between the fixing member and the conveying member (15) nipped by the pressurizing unit, the fixing member (11) and the recording side of the recording medium (17) are made come into tight contact with each other, and a contact part (Fig. 3, when the fixing member and conveying member meet to contact and fixate the image on the medium) between the fixing member and the recording side of the recording medium (17) is irradiated by the light for fixation which transmits the fixing member to thereby cure/fix the photocurable ink on the recording side of the recording medium.

With respect to claim 16, Hwang teaches the printing apparatus wherein the printing unit (Fig. 1) forms an image with the photocurable ink on an outer peripheral side of the fixing member (11), the recording medium (17) is conveyed between the fixing member (11) having the outer peripheral side on which the image is formed with the photocurable ink (16) and the conveying member (15) which are nipped by the pressurizing unit (Fig. 3, the spring member for 15), and while transferring the

photocurable ink (16) onto the recording side of the recording medium, the photocurable ink transferred on the recording side of the recording medium is cured/fixed (See col. 4, lines 32 – 37).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang (6,049,692) in view of Cerrah (6,606,545).

With respect to claims 4 and 12, Hwang teaches all that is claimed as discussed above except the fixing apparatus having the light source disposed on the outside.

Cerrah teaches the apparatus for fixing photocurable inks (Fig. 2) wherein the heat source (9) is disposed on the outside a fixing member (5), and the heat source (9) for fixation is incident on the fixing member (5) from the side opposite to the nipped part of the fixing member (5) and the conveying member (3), transmits the fixing member, and the contact part between the fixing member and the recording side of the recording medium is irradiated by the light for fixation (See col. 4, lines 61 - 66).

It would have been obvious at the time the invention was made to modify Hwang to have a fixing apparatus having the a heat source disposed on the outside as taught

by Cerrah to provide a suitable means for providing heat to the fixing roller to fix the toner image on the medium.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang (6,049,692).

With respect to claim 7, Hwang teaches all that is claimed above except fixating the image onto the medium for the wavelength lies from 200 nm to 1,300 nm.

Since Hwang teaches having a wavelength for fixation, it would be obvious through routine experimentation one of ordinary skill in the art would determine the optimal value for fixating the image onto the medium for the wavelength lies from 200 nm to 1,300 nm.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang (6,049,692) in view of Muramatsu (5,774,763).

Hwang teaches all that is claimed as discussed above except the apparatus for fixing photocurable inks wherein the fixing member is made of quartz glass.

Muramatsu teaches the apparatus for fixing photocurable inks wherein the fixing member is made of quartz glass (See column 5, lines 52 – 53).

It would have been obvious at the time the invention was made to modify Hwang to have an apparatus for fixing photocurable inks wherein the fixing member is made of quartz glass as taught by Muramatsu to provide a suitable means for projecting the heat

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from the lamp to the surface of the roller to fix the image to the medium while providing heat resistance to the inner surface of the roller (See col. 5, lines 51 – 56)

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang (6,049,692) in view of Ewert (6,523,949).

Hwang teaches all that is claimed as discussed above except the light source is an ultraviolet light for curing with ultraviolet ink.

Ewert teaches the apparatus for fixing photocurable inks wherein the light for fixation is ultraviolet light and the photocurable ink is ultraviolet-curing radical polymerization ink (See col. 9, lines 35 – 40).

It would have been obvious at the time the invention was made to modify Hwang to have a light source is an ultraviolet light for curing with ultraviolet ink as taught by Ewert to have a means for printing wherein the ultraviolet ink dries more rapidly on the face of the media.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marvin P. Crenshaw whose telephone number is (571) 272-2158. The examiner can normally be reached on Monday - Thursday 7:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MPC

April 2, 2007



JUDY NGUYEN
SUPERVISORY PATENT EXAMINER